REMARKS/ARGUMENTS

Claim 5 has been canceled. Claims 1-4 and 6-25 and new Claims 26-31 are active in the case. Claims 12-22 stand withdrawn from consideration. Reconsideration is respectfully requested.

The present invention relates to an animal feed additive.

Claim Amendments

Several of the claims have been amended in order to make minor corrections thereto. Claims 23 to 25 have been amended to eliminate improper multiple dependency. In fact, amended Claim 23 and new Claims 26 and 29 find basis in unamended Claim 23 and process claims 12, 13 and 14. New Claims 26-31 find basis in Claims 23-25. Accordingly, amendments to the claims and the new claims do not introduce new matter into the case. Entry of the amendments and new claims is respectfully requested.

Claim Rejection, 35 USC 112

Claim 2 has been amended in order to clarify the same and in a fashion believed to be sufficient to obviate the basis for rejection of the claim. Withdrawal of the rejection is respectfully requested.

Invention

The present invention is directed to an animal feed additive based on a fermentation liquor which is a combination of (a) one or more cysteine compounds selected from the group consisting of L-cysteine, L-cystine, thiazolidines, and salts thereof, and (b) from 2 % to 100 % of other non-cellular ingredients of the fermentation liquor.

In another embodiment of the invention an animal-feed additive based on a fermentation liquor is constituted of (a) a thiazolidine or a combination of a thiazolidine together with at least one of L-cysteine, L-cystine, and salts thereof, and (b) from 2 % to 100 % of other non-cellular ingredients of the fermentation liquor.

An objective of the invention is to provide an animal feed product that contains a variety of nutrient ingredients which also specifically contains one or more cysteine compounds. A particularly desirable aspect of the invention is that it enables the storage of a solid or liquid feed for at least two months without substantial loss of the amino acid content of the feed additive.

Prior Art Rejection

Claims 23-25 stand rejected based on 35 USC 102(a) as anticipated by Winterhalter et al U.S. Patent 5,972,663. This ground of rejection is respectfully traversed.

Applicants do not concur that the cited and applied Winterhalter et al '663 reference anticipates the present invention as claimed. Winterhalter et al discloses transformed microorganisms that fermentatively prepare L-cysteine, L-cystine, N-acetylserine and/or thiazolidine derivatives. The microorganism is one that overexpresses at least one gene which encodes a protein which is directly suitable for secreting antibiotics, or other substances that are toxic for the microorganism, from the cell. While the reference clearly describes the formation of L-cysteine which is oxidized readily to L-cystine by atmospheric oxygen, it does not describe a process of producing an animal feed, particularly the process of the present invention of preparing an animal feed as set forth in Claim 12 where a biomass containing cysteine compounds is separated from its fermentation liquor and then the mixture obtained is concentrated by the removal of water. Since the process is not taught or suggested by the reference, it is clear that the animal feed material that results from the process is not taught or

suggested as set forth in Claims 23-25 (new Claims 29-31). Accordingly, withdrawal of the rejection is respectfully requested.

Claims 12-11, 23-25 stand rejected based on 35 USC 103(a) as obvious over Winterhalter et al U.S. Patent 5,972,663 and Leinfelder et al U.S. Patent 6,218,168 in view of Binder et al, U.S. Patents 5,622,710; 6,465,025 and 6,218,168. This ground of rejection is respectfully traversed.

Applicants retain their comments as stated above regarding the Winterhalter et al patent that it does not show or suggest the animal feed additive of the invention in light of the process steps required to prepare the feed additive. That is, the reference does not show or suggest an isolation of a biomass from a fermentation liquor that contains cysteine compounds and then optionally concentrating the biomass mixture.

Applicants submit that the Leinfelder et al patent is even less relevant to the present invention than Winterhalter et al, because it discloses serine acetyltransferase enzymes that exhibit a sensitivity to the inhibit L-cysteine which is reduced in comparison to the wild-type enzyme. Further, the sequence of amino acids in the protein exhibits at least one mutation or deletion when compared to the wild-type sequence. The acetyltransferase enzymes of the patent, in fact, exhibit diminished cysteine sensitivity. Such a disclosure has nothing to do with the present invention that is directed to an animal feed additive which is a biomass material containing cysteine compounds. The reference neither shows nor suggests the present process not the animal feed additive that results therefrom.

The deficiencies of the patent disclosures discussed above are neither overcome nor improved by the Binder et al patents. Patents '933 and '710 disclose animal feed supplements that are fermentation broths and therefore mixtures of one or more amino acids with sugars, proteins, microorganisms and the like. In both references, the animal feed supplements preferable contain only one amino acid, in particular the amino acids lysine, threonine,

tryptophan, leucine, isoleucine, valine, proline, arginine and alanine. Cysteine compounds are not shown or suggested as amino acid components of the supplements disclosed in the patents. In fact, the '933 patent specifically describes in column 4, lines 54-58 that aside from the several amino acids disclosed in the patents, other amino acids should not be present in the feed supplements that are r undetermined or not suitable for the feed supplements. Such a disclosure clearly excludes cysteine compounds from the disclosed animal feed supplement compositions, and consequently, the Binder et al patents do not overcome or improve upon the deficiencies of Winterhalter et al and Leinfelder et al.

Finally, the '025 patent discloses an animal feed supplement that is based upon lysine as the amino acid component, the supplement being derived from the fermentation broth of Coryneform bacteria. If biomass material is also present in the supplement, other amino acids, in minor amounts only, can be present and these are L-alanine, L-asparagine, L-glutamine, L-methionine, L-threonine and L-valine. No teaching or suggestion of an animal feed supplement containing cysteine compounds is shown or suggested by the patent, in particular, a cysteine compound containing composition that effectively stabilizes cysteine and derivatives thereof. Accordingly, the stated ground of rejection is believed overcome and withdrawal of the same is respectfully requested.

It is believed that the application is in condition for allowance. Early notice to this effect is earnestly solicited.

Respectfully submitted,

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